

Remarks

Claims 16 has been amended, and claim 18 canceled. Claims 1-4 and 6-17 remain pending in the application. Reexamination and reconsideration of the claims, in view of the discussion below, are respectfully requested.

Claims 1-4, 6-7, 10-12 and 14-18 were rejected under 35 U.S.C. 103(a) as being unpatentable over Golick et al. (EP 0028487).

Golick et al. relates to a probe for measuring the thickness of a coating on a substrate, when either the coating or substrate (or both) are ferromagnetic, by measuring the intensity of magnetic flux through a Hall sensor. The probe comprises a magnet having its north and south poles disposed on a line parallel to the longitudinal axis of the housing, a Hall sensor, and a thermistor for measuring the temperature fluctuations of the Hall sensor. The probe can be used to measure the amount of magnetic flux within the coating and hence provide information on the thickness of this coating. The Golick et al. invention is said to be particularly useful for measuring the thickness of electro-plated coatings, in particular nickel coatings. On page 13 it is stated that the probe can be used to measure nickel coatings even when the nickel coating has an over-plate, "for example, of gold, rhodium or chromium."

Therefore, although this citation does disclose measuring magnetic flux density in order to determine the thickness of a layer, there is no disclosure of using such a method to measure the thickness of a chromium depleted zone within the surface region of a steel member. The Examiner has alleged that, as chromium is known to be magnetic, it would be obvious to monitor or detect chromium by measuring the magnetic flux through a steel member using the device of Golick et al. However, the Examiner has not provided any evidence as to why a person of ordinary skill in the art would be motivated to monitor the thickness of the chromium depleted layer within a steel member. Golick et al. only discloses using the magnetic probe in relation to measuring the thickness of coatings specifically applied to ferrous or non-ferrous substrates. There is no suggestion within this document that it can be beneficial to use the probe to monitor changes occurring within a single metal member. Furthermore, from the above quoted passage on page 13, it is stated that the thickness of a nickel coating can be determined

even when the coating is over-plated with chromium. Therefore, this document teaches that the measurement of chromium itself is not important.

The Examiner has provided no evidence or explanation of any motivation for one of ordinary skill in the art to use the probe of Golick et al. in any field outside of that discussed within this reference. There is no suggestion in that it would be beneficial to measure the chromium depleted sub-surface region of the pipe. Therefore, although the magnetic properties of chromium are indeed known, the Examiner is wrong to suggest that it would be an obvious step for one of ordinary skill in the art to measure the thickness of the chromium depleted zone of a steel member when no evidence of the benefits of such measurement are provided or pointed towards in the prior art.

Therefore, Applicants respectfully traverse that Golick et al. makes obvious the invention of the present application. It is respectfully submitted that this basis of rejection be withdrawn and that the claims of the application be allowed.

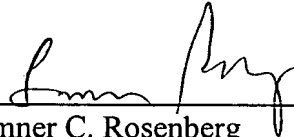
Applicants appreciate the examiner's indication that claims 8, 9 and 13 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. However, based on the discussion above, Applicants believe the suggestion is unnecessary.

In view of the present amendments to the claims and the remarks herein, Applicants respectfully submit that claims 1-4 and 6-17 are allowable, and Applicants request that the examiner pass these claims to issuance at an early date.

No fees are believed due. If, however, the Commissioner believes any additional fees are due, the Commissioner is hereby authorized to charge any such fee deficiency, or credit any fee overpayment, to Deposit Account No. 14-0629.

Respectfully submitted,

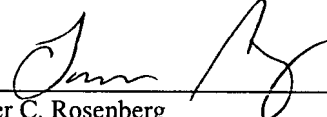
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